Three out of the four species whose living allies occur in the East Indies come from the older deposits of Aix, and only one of the two remaining Aix species shows special affinities to American types. "We thus find here," the author remarks, "as among other insects and among the plants, a growing likeness to American types as we pass upward through the European tertiaries."

This handsome memoir appears in print through the generosity of Mrs. Elizabeth Thompson, of New York city, who generously gave the sum of one thousand dollars for the promotion and publication of original investigations by members of the association. The results in every way prove the wisdom of the donation, and we express the hope that similar benefactions may follow from other sources.

SACHS'S HISTORY OF BOTANY.[1] — Under the patronage of the King of Bavaria, the Royal Academy of Sciences is publishing a History of Modern Science in Germany. The treatment of the individual sciences has been entrusted, by a special commission, to men eminent in their respective departments. This volume is one of the earliest of the series. Professor Sachs, of Würzburg, well known as a high authority in vegetable physiology, and more widely as the author of A Text-Book of Botany, was selected to write the history of botany. The history is given in three books. The first treats of morphology and systematic botany, and covers the period from Otto Brunfels (1530) and Fuchs (1542), down to 1860. The most interesting chapters are those devoted to morphology as influenced (1) by the theory of metamorphosis and the spiral distribution of leaves (1790–1850), and (2) by a fuller knowledge of the cell and the lower grades of plants, and (3) by the theory of development (1840–1860). Professor Sachs looks upon the work done during the twenty years just mentioned, as having freed morphology and systematic botany from their old prejudices; sight has become clearer, the methods of investigation safer, and the manner of putting questions sharper.

The second book sketches the progress of vegetable anatomy from Malpighi and Grew (1671–1682) down to the time of Nägeli. The author justly regards Von Mohl and Nägeli as having together placed this division of botany on a secure foundation. The molecular theory of the latter is considered the basis of modern vegetable physiology.

To this subject the third book is devoted. The conflicting views which have been held respecting reproduction, nutrition, and the dynamics of plants are fully presented and with great fairness. It is hardly possible to detect any partiality in this remarkable section. It remains to be noticed that this history is not confined to botany in Germany; Germans may, however, well be proud of the large and honorable share which their countrymen are here shown to have taken in the advancement of the

[1] *Geschichte der Botanik vom* 16 *Jahrhundert bis* 1860. Von DR. JULIUS SACHS. München. 1875. (A History of Botany from the 16th Century to 1860. By DR. JULIUS SACHS. Munich. 1875.)

science, and they may congratulate themselves upon the selection of an historian who has not ignored the claims of other nations.

THE OCTOPUS.[1] — This is a pleasant account of the Octopus or poulpe, adapted to the mind of the average visitor at the immense aquarial establishments of the sea-ports of England, and perhaps worth reading on this side of the water, where poulpes — "these blasphemies of creation against itself," as Victor Hugo styles them — are common enough southward, but fashionable colossal aquaria are as yet lacking.

EDWARDS'S BUTTERFLIES OF NORTH AMERICA.[2] — The fourth part of the current series of this magnificent work, issued from the Riverside Press at the end of December last (but dated November), contains fewer subjects than usual, two whole plates being given to illustrate the history of *Melitæa Phaeton* and *Papilio brevicauda*. The former plate is perfect as far as the colored figures are concerned, and cannot be surpassed, if it can be equaled, by the best of foreign work; but the plain lithograph of the web is not so satisfactory, showing in but few places any indication of the web-like structure. The other plates contain three species of *Argynnis* (*A. Eurynome*, *Bischoffi*, and *Opis*), and two of *Grapta* (*G. Hylas* and *Marsyas*). The text accompanying the three plates given to these insects is mainly descriptive, but contains some strictures on Mr. Scudder's classification of these species of *Grapta*. The accounts of *Phaeton* and *brevicauda*, on the other hand, are very full, and are welcome additions to the history of our butterflies. That of the former is very nearly complete, but contains a few errors; for instance, in the statement that the rows of hair-bearing tubercles of the newly hatched caterpillar "indicate the position of the future spines." It has long since been pointed out (*Canadian Entomologist*, March, 1872) that this is not the case, the position of few or none of the spine-bearing eminences of the mature caterpillar corresponding with those of the previous hair-supporting tubercles. These are points of structure to which the author pays little attention, but which are very important in their bearing upon the affinities of butterflies.

In writing that "*Phaeton* alone, out of a hundred species of butterflies that frequent our fields," protects itself in the larval stage "in a web woven by the community," Mr. Edwards seems to be unaware that this is the case with every one of the tribe to which *Phaeton* belongs, as far as their history is known, and will therefore doubtless prove true of the few species of Eastern North America whose history has not yet been fully elucidated. It is also true of some other of our common butterflies.

[1] *The Octopus, or the Devil Fish of Fiction and of Fact.* By HENRY LEE. With Illustrations. London. 1875. 12mo, pp. 114. For sale by the Naturalist's Agency, Salem.

[2] *The Butterflies of North America.* With Colored Drawings and Descriptions. By WM. H. EDWARDS. Boston: H. O. Houghton & Co. 4to. $2.50.